CLAIMS

What is claimed is:

1.   A method for allocating physical storage, comprising:

creating a virtual volume, the virtual volume comprising a virtual volume region storing a pointer to a zero logical disk, wherein the zero logical disk is not mapped to any physical storage;

receiving from a host a write request to the virtual volume;

mapping the write request to the virtual volume region;

mapping the virtual volume region to the zero logical disk;

in response to said mapping the virtual volume region to the zero logical disk, assigning a logical disk region to the virtual volume region, wherein the logical disk region is assigned to physical storage; and

writing to the logical disk region.

2.   The method of claim 1, further comprising, prior to said writing to the logical disk region:

caching the write request; and

sending a pass status to the host indicating the write request has been completed.

3.   The method of claim 2, wherein the virtual volume is located at a node in a system, the method further comprising:

replicating the write request to another node in the system.

4.   The method of claim 1, further comprising, after said writing to the logical disk region:

sending a pass status to the host indicating the write request has been completed.

5.   The method of claim 1, further comprising, prior to said assigning a logic disk region to the virtual volume region:

determining if the virtual volume is greater than a size limit; and

issuing an alert if the virtual volume is greater than the size limit.

6.   The method of claim 1, further comprising, prior to said assigning a logic disk region to the virtual volume region:

determining if there is at least one logical disk region available to assign;

if there is not at least one logical disk region available to assign, determining if a pool of logical disks for providing logical disk regions is greater than a size limit; and

issuing an alert if the pool is greater than the size limit.

7.   The method of claim 1, further comprising, prior to said assigning a logic disk region to the virtual volume region:

creating a logic disk comprising the logical disk region.

8.   The method of claim 7, further comprising, prior to said creating a logic disk:

queuing the write request and the another write request to the virtual volume region until said assigning a logical disk region to the virtual volume region.

9.   The method of claim 1, further comprising, subsequent to said assigning a logic disk region to the virtual volume region:

determining if the virtual volume is greater than a size limit; and

issuing an alert that the virtual volume is greater than the physical size limit.

10.   A method for allocating physical storage for a virtual volume, comprising:

creating the virtual volume, the virtual volume comprising a virtual volume region storing a pointer to a zero logical disk;

receiving, from a host, a read request to the virtual volume;

mapping the read request to the virtual volume region;

mapping the virtual volume region to the zero logical disk; and

in response to said mapping the virtual volume region to the zero logical disk, returning data with all zeros to the host.

11.   The method of claim 1, wherein the logic disk region is part of a logical disk of a RAID level that comprises multiple physical disks.

12.   The method of claim 3, further comprising:

receiving from the host a write request to the virtual volume;

mapping the write request to the virtual volume region;

mapping the virtual volume region to the zero logic disk;

in response to said mapping the virtual volume region to the zero logic disk, assigning a logical disk region to the virtual volume region; and

writing to the logical disk.